

WHAT IS CLAIMED IS:

1. A scintillator panel comprising:

a multi-sided substrate made of carbon as a major constituent;

5 a scintillator formed on a first side of the substrate, said scintillator covering a substantial portion of the first side of the substrate, with at least one portion of the first side of the substrate

being uncovered by the scintillator; and

10 a protective film substantially covering all exposed surfaces of the substrate and the scintillator, including a second side of the substrate opposite the first side of the substrate as well as the portion of the first side of the substrate uncovered by the scintillator.

15 2. A scintillator panel according to claim 1, wherein said substrate is made of amorphous carbon or graphite.

3. A scintillator panel according to claim 1, further comprising a reflecting film formed between a
20 radiation emitting surface of said substrate and said scintillator.

4. A scintillator panel according to claim 3, wherein said reflecting film is a metal film.

5. A scintillator panel according to claim 3, wherein
25 said reflecting film is a thin transparent film having a refractive index lower than a refractive index of said

scintillator.

6. A scintillator panel according to claim 5, wherein said thin transparent film is a film made of a material containing a substance selected from the group consisting of LiF, MgF₂, CaF₂, SiO₂, Al₂O₃, MgO, NaCl, KBr, KCl, and AgCl.

7. A scintillator panel according to claim 1, wherein the portion of the first side of the substrate uncovered by the scintillator is located adjacent to an edge of the first side of the substrate.

8. A scintillator panel according to claim 1, wherein at least two portions of the first side of the substrate are uncovered by the scintillator and the protective film substantially covers the portions of the first side of the substrate uncovered by the scintillator.

9. A scintillator panel according to claim 8, wherein the portions of the first side of the substrate uncovered by the scintillator are located adjacent to different edges of the first side of the substrate.

10. A scintillator panel according to claim 8, wherein the portions of the first side of the substrate uncovered by the scintillator are located adjacent to opposing edges of the first side of the substrate.

11. A scintillator panel according to claim 1, wherein multiple portions of the first side of the substrate are uncovered by the scintillator and the protective film

covers the portions of the first side of the substrate uncovered by the scintillator, the portions of the first side of the substrate uncovered by the scintillator are located adjacent to different edges of the first side of the substrate, and the sides of the substrate connecting the first side and the second side are covered by the protective film.

12. A scintillator panel according to claim 11, wherein the portions of the first side of the substrate uncovered by the scintillator are located adjacent to opposing edges of the first side of the substrate.

13. A scintillator panel according to claim 1, wherein said protective film further covers at least a part of said substrate.

14. A scintillator panel according to claim 13, wherein said protective film covers entire surfaces of said substrate.

15. A radiation image sensor comprising an image sensing element placed to oppose said scintillator of said scintillator panel defined in claim 1.